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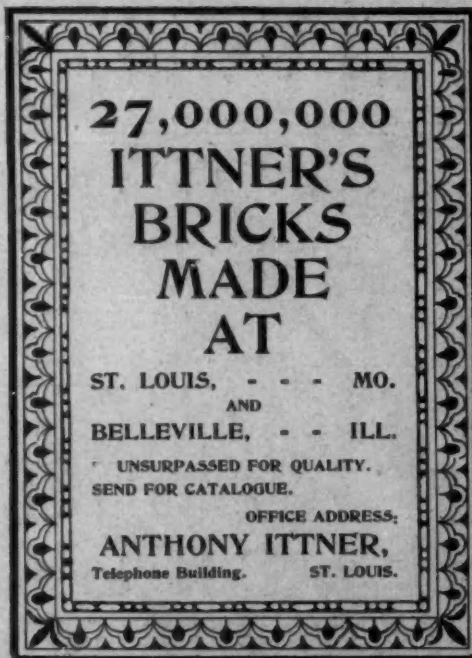
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It is gratifying to receive such hearty and appreciative commendations as is given to THE BRICKBUILDER in the *Architectural Era* of October, especially when that commendation comes from a journal as careful and discriminating as that which Prof. Osborne, of Cornell, so well conducts.

That the reforms we advocate with regard to brick architecture and brick building are so constantly commended in various parts of the country, seems to us to indicate that the improvements we look forward to will rapidly prevail. The example is being set everywhere by our foremost architects, and others will not be slow in attempting to follow where they lead. But in making that attempt, failure is certain, unless the principles which governed in the designing of our best brick buildings are thoroughly understood, and unless the motive is a desire for real excellence for its own sake, and not a mere desire for display or the following of fashion. The underlying principles of good brick design are, of course, essentially the same as those which must govern all good design; but the application of these principles differs with the material to be used. Nor need the strict application of the best principles of design produce any monotony, or lead to the sacrifice of any of that piquant variety which unfortunately seems, by most of our people, to be considered of greater importance than real excellence. What a variety the application of the same principles may produce, we can see by a comparison of the excellent brick styles of such countries as Lombardy, Normandy, Holland, North Germany, and England. What a difference between the many colored brick designs of the Romanesque period in Lombardy, with their quiet succession of round-arched arcades, or the work of the early Renaissance of the same district, with terra-cotta and a profusion of moulded ornament; or the tourelles and flat-arched windows and horizontal, plain, brick strings of Normandy manor houses, or the high-peaked, stepped gables of Holland, or the cosy domesticity of English halls, with their tall, grouped chimneys, their pattern work and rubbed mouldings. The variety seems endless, yet in each case it is but the application, under different conditions and in different ways, of the same principles and the same material. We may go on, and, taking the hints which the architectural wealth of Europe affords, may produce still further variety under the changed conditions under which we live. But if our work is to have the excellence of the old work of Normandy or Lombardy, of Holland or England, it must follow the same principles which were followed unconsciously by those builders of old,—the principle of frank recognition of the characteristic qualities of the material in which we work, and of the conditions

with which we have to deal, using them as a motive for our designs, using them as a musician uses the notes in his music. For the laws of good design in architecture are as inexorable as the laws of harmony, if we could but see it.

The *London Builder* of Oct. 8 publishes a very admirable series of drawings for St. Saviour's Church at Folkestone, now being built from the design of Messrs. Somers Clarke and J. T. Micklethwaite, architects, which it is interesting to compare with Mr. Van Straaten's design for a brick church, published in our May number. Messrs. Clarke and Micklethwaite's design is for a church of Kentish rag stone with brick dressings, the window jambs and tracery being of terra-cotta. The design, however, is equally suited to execution in rough, common brick (in place of the rag stone) and face brick trimmings, and is an admirable example of the proper use of brick in Gothic design. The construction and design of the window tracery are especially interesting and instructive. With but slight modifications, which we think would hardly injure the design, such tracery as this could be just as well executed in brick as in terra-cotta. All the pieces are small, and the design of the window is essentially a brick design,—a design which makes the most of the essential peculiarities and characteristics of brickwork, and uses them as a motive,—a design, in short, which, while admirable in brickwork, would be defective if executed in stone. We regret, however, the form of the arched openings. A full pointed arch could have been just as well used without otherwise affecting or altering the design. The segmental pointed arch is never beautiful, and should be used only when the exigencies of the case clearly demand it, if indeed they ever do.

The manner in which the brick trimmings are contrasted with the rag stone on the exterior is very decorative. A similar effect, as we have already suggested, could be produced by using two kinds, or two colors, of brick.

We regret that in the interior the brickwork should be covered with plaster. A much more dignified and satisfactory effect can be obtained, in the interior of such a building as a church, by frankly exposing the brick and using it as a means of obtaining decorative effect. And this, we think, is clearly shown by the sectional drawing which shows the great interior pier arches, part in the brick, part with their plaster covering. Moreover, the brick, constituting the very body of the wall, is more permanent and durable than a plaster coating can ever be.

The bonding of the pier arches, which are diamond shape in plan, is interesting and ingenious. The exterior brickwork is laid in English bond throughout, and (as always in England) in every alternate course. The *Builder* publishes a perspective of exterior and interior, a side elevation, detailed elevation, and sections of the important parts, and a careful drawing showing the construction of the window tracery, in which the forms of the bricks and the manner of bonding are very instructive. The whole design is one of the most suggestive brick designs we have seen for some time. The church is thus described:—

"This church, when complete, will consist of a nave of four bays, with north and south aisles, and a large western tower opening into it; of a chancel of two bays, with north and south aisles, that on the south being used as a side chapel, and on the north as an organ place. The sacristy and choir-vestry

adjoin the organ place. The chancel is 39 feet long inside; the nave and tower 97 feet long. The width of the nave and chancel, which have a roof running through continuously from east to west, is 26 feet 6 inches; each aisle is 18 feet wide, and the total internal width is 67 feet. To the wall plate there is a height of 30 feet from the nave floor, and to the ridge of the pointed barrel-ceiling is 43 feet. Over the choir-vestry is a blowing-room for the organ.

"The church stands on clay and is in a very exposed position. The sea air soon eats into stonework. The outside walls of the church are, therefore, built hollow, with an outer skin of Kentish rag with brick dressings and an inner skin of brick, the two being tied together with slabs of paving-stone. The dressings are of brick. The window-jambs and tracery are of terra-cotta made by Messrs. Doulton. The object the architects have had in view in designing the window has been to treat terra-cotta as what it really is, — superior brick, and not sham stone. The pieces are all small, and range in color, jointing, etc., with the adjoining brickwork.

"The church is built inside of hard rough brick to receive plaster. The piers will be decorated with sgraffito, as will be the spandrels above the arches. The arches themselves will have mouldings in plaster, treated flatly and to suit the material, and in no way to imitate stone. The inner ceiling of the nave and chancel, which takes the form of a pointed barrel-roof, is in plaster with wood ribs. The aisles, which have flat roofs, are covered with Fawcett's fireproof system of hollow tube construction, laid on the outer side with Claridge's asphalt. The chancel is paved with squares of black and white marble. To isolate this floor from the damp it is laid on Fawcett's fire-clay tubes. Wall panelling will be carried round the church, and the bases of the piers are also to be similarly encased."

The architects have certainly carried out most successfully their intention "to treat terra-cotta as what it really is, — superior brick, and not sham stone," and are greatly to be commended for so doing.

English architects have been too apt to treat terra-cotta exactly as if it were stone, so that, for instance, a photograph gives the impression of a stone, not of a terra-cotta, building. Terra-cotta used in this way is used at a disadvantage. It cannot compete with stone on the stone's own ground, and yet it can be made to rival or even surpass stone in richness and beauty of effect (as it does in durability), when used so as to make the most of its characteristic qualities. Too often terra-cotta is treated as if it had more in common with stone than with brick.

It is surprising, indeed, how little the true nature of terra-cotta is understood. The difference between terra-cotta and brick lies solely in the fact that the terra-cotta is moulded or modelled by hand or formed under but slight pressure (whereas bricks are made under more or less great pressure), and that a much finer quality of clay is used in making terra-cotta than in making most bricks. Having received but slight pressure in the making, terra-cotta is capable of bearing comparatively slight pressure in place in the building, and therefore is properly used only in the more purely ornamental features. Sometimes large pieces of burnt clay of the finer kinds formed under great pressure are called terra-cotta, but they are really a fine kind of brick. Terra-cotta is best made in small or thin pieces on account of the shrinkage of the material in the burning, and the best effects in its use are also obtained by using it in small, not large, pieces. It is essentially plastic in its nature, — for it is but the modelled clay burnt, — and this should never be lost sight of in its use. To obtain the best effects in the richer decorative parts, especially in figure work, it should not

be cast, but the actual clay model, as it comes from the artist's hands, should be burnt. Another characteristic which is of great decorative value, is the slightly different color which the different pieces take in the burning. And yet this interesting and beautiful result of the nature of its manufacture is often deliberately thrown away by streaking it over with a thin coating which gives it a flat, even color, generally of very ugly shade. If designers and manufacturers would only consider the essential character of the material they are using, such mistakes as this would not be made.

These essential characteristics of terra-cotta — let our manufacturers remember — are qualities to be proud of, to make the most of; not defects to be ashamed of and disguise, as if, after all, they were a little bit ashamed of their terra-cotta, and down in their hearts wished it were stone or anything but what it is. Terra-cotta and brick, we repeat, are materials of which our clay workers ought to be proud, and whose essential characteristics they should try to emphasize. Let them not, by disguising these characteristics, show that after all they do not believe what they say, when they boast that they are working in the best material there is.

We wish that every worker could appreciate the beauty of the material he handles, so that every man who moulds the clay, every bricklayer who builds a wall, should give his work the grace which can only come from the sentiment of beauty; so that he would take pleasure in giving the most graceful line to his moulding, and select his bricks so that their contrast of color should be most attractive. Beautiful work we can have only from those who take pleasure in their work.

We quote below a portion of a lecture recently delivered by Prof. T. Roger Smith at University College, London, in which he shows how the humblest craftsmen may really be artists if only they bring the artistic spirit, the love of beauty for its own sake, to their work. His remarks apply as much to the bricklayer and modeller as to the potter or smith whom he mentions.

"An art has been defined as 'the power of doing something not taught by nature and instinct.' Obviously, no natural gift, no skill gained unconsciously and in a natural way, is an art. To take a very simple illustration, riding and swimming are often spoken of as arts because we all acquire the power consciously and laboriously — not so walking or running, which may be said to be natural. 'Art is not nature.' The word 'arts' in the plural has an extremely extended significance, and may be used to cover all the kinds of learning and knowledge that are called liberal pursuits. The word 'art,' on the other hand, has often a narrow meaning, and is limited to the sort of skill which is directed towards objects of beauty. Art in this sense is a word which has been of late years on every one's tongue. More correctly, this sort of art is called fine art, but we usually now refer to painting, sculpture, music, architecture, and the related pursuits as pre-eminently the arts. This, however, is not strictly accurate. When we talk of an art it may or may not imply the possession and use of learning and knowledge, and it may or may not imply the exercise of trained and cultivated taste and the pursuit of beauty; but it always means a skill that does not come by nature. We talk of the art of the potter, the weaver, the navigator, the engraver, and, rising to a higher plane, we recognize the art of surgery, the art of war, the art of advocacy; but when what is the prime mover is no longer skill, but either learning, experience, money, or passion, the pursuit ceases to be thought of as an art. We do not, for example, talk of the art of a student, or an agriculturist, or a merchant, or a politician, although each of these must develop some skill in the exercise of other powers.

"Though there be a distinction between an art as thus described

and a fine art demanding cultivated taste as well as skill, the relation between the two is still very intimate; the links, for example, which connect the art of the sculptor with that of the jeweller, or even the potter, are close ones. There must be the same highly trained manual skill, and the same intimate knowledge of the materials used. The same clear and definite perception of the aim to be attained is needed for success in either. In each of the two industrial arts I have named, pottery and the goldsmith's craft, the production of objects of beauty is also an aim of the artificer, and if in addition the pursuits of the sculptor be of a higher, more arduous, and more intellectual quality, that difference is more in degree than in kind. There is, of course, between most of what are sometimes called the industrial arts, taken as a whole, and the fine arts, a difference which is conspicuous enough, but it is not always recognized that the whole of the arts are connected together to a remarkable degree by the fact that trained skill is in each case indispensable to those who would pursue them, and that there is not often a hard-and-fast boundary line distinguishing the one from the other.

"He that pursues an industrial art is called an artisan; he that pursues a fine art is called an artist; but many an artisan is an artist as well. The smith who hammers out a bit of red-hot iron into a horseshoe, and replaces the one your horse has cast, is, perhaps, only an artisan. Yet, while you wait and watch him, you are filled with admiration at the deftness, speed, and accuracy with which the work is done. Perhaps the same man can beat out for you a finial of wrought-iron round which he twines the vine leaf or the olive, and into which he infuses grace, beauty, charm. That man is then the artist, but his manual skill is an essential, integral part of his equipment for his art, although the taste, the feeling for beauty, and the knowledge of how to impart beauty to what was an hour ago a dull, inert mass of cold iron, is the highest development of his qualification; useless, however, without the other homelier power, and in some sort, as I take it, rather a development of it than a distinct gift."

TO CONTRACTORS AND BUILDERS.

To those builders to whom this number of THE BRICKBUILDER shall come as a sample copy we request their kind consideration of its merits as a business help.

There are a number of very meritorious periodicals devoted to elevations and details of frame buildings, but there seems to be a demand for a periodical furnishing details of the brickwork that makes a part of almost every building.

Such a periodical THE BRICKBUILDER aims to be.

For instance, this number contains a fine selection of brick fireplaces, wholly new and original, with details so complete that a master mason can build any one of them directly from the plates of the paper, also designs of chimney-tops. The number following will contain some fine elevations and details of buildings by prominent architects, also designs of arched windows. The April number contains designs of two-story store fronts. The May number was largely devoted to the elevations and details of a brick church, designed expressly for our paper by Mr. J. A. Van Straaten, Jr., of Boston, and which has received high praise for excellence from some of the leading architects of the country. The July number contained forty-five original designs of brick cornices, and the August number several designs of brick fireplaces and the elevations and details of a twenty-foot front brick store building at Fort Wayne, Ind., designed by Messrs. Wing & Mahurin.

In addition to these extremely practical features we have been favored by many of the prominent architects of the country with elevations and details of brick buildings, designed by them, which have never before been published, and we have the promise from a

large number of others that when they have any distinctively brickwork ready for publication, it will be contributed to our plate department.

During the year we shall insert twelve supplements, being photographic reproductions of famous brick buildings, mostly of foreign countries.

We hope you will be favorably impressed with THE BRICKBUILDER, and we respectfully solicit your subscription. The price is \$2.50 a year. Your local checks will be accepted at par.

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BRICKS AND JOINTS IN BRICKWORK.

From *Building News*.

There is no constituent part of a building about which so much might be written as of a brick; and what is of greater importance from a practical point of view, there is no part less susceptible to disintegrating atmospheric and other influences, and therefore so durable as a well-burnt brick, an example of which—if we may adduce one so far fetched—is that of Hillah, a modern settlement on the west bank of the Euphrates, built, as we are informed by a paper on "Recent Assyrian Research," read before the Philosophical Society of Great Britain, of the excavated bricks and terra-cottas which have been thrown up in the comparatively recent explorations of the ruins of Babylon, situated on the opposite side of the river. But we are not wanting in examples nearer home—

"Those brick towers
The which on Thames' broad, aged back to ride,
Where now the studious lawyers have their bowers,
Where whilom wont the Templar Knights to bide,
Till they decayed through pride."

And, later still, the 16th century or Tudor brickwork of Hampton Court Palace, with its well-proportioned niche heads of elliptical plan and semicircular elevation; the Layer Marney Tower and churches of Essex, and the Gray's Inn Hall, Holborn, lately denuded in part of its coat of daub or stucco, revealing the warm, deep—and in some portions brindled—color of 16th-century bricks, most probably produced by the fierce heat of wood-burning, and which are likely to outlast the bricks of more modern manufacture employed in the restoration of the exterior wall facings.

These remarks apply more particularly to the northwest portion of the building on either side of the archway approached from Gray's Inn, not the least pleasing feature of the old facing-bricks of which was their uniformity of size and shape, with a regular thickness of bed and cross joints, for which we look in vain on many of our buildings of more modern erection. The "closures" or quarter-bricks in the heading courses next the window reveals bear evidence, by their regularity of size, of having been cut to a gauge for the purpose of keeping the perpend in the heading courses. This was a sample of the work done when the general contractor or quondam builder's clerk did not obtain. The face-joints as originally struck and trowel-cut are unfortunately lost, as they had been hacked to form a key for the stucco coating, now removed, and what remained of the old face-joints was therefore necessarily hacked out, and has been reformed by that shoddy process known in the trade as "pointing."

The writer would here appeal to all architects, in the interest of good work and the production of skilled workmanship, to insist on the face brickwork being trowel-struck and cut during the erection of the work, except in winter months, when sharp frosts are likely to occur, when the joints should be raked out at least half an inch deep, and square with the face, laying bare the edges of the bricks in the full depth of the raking out.

The subjoined are some of the reasons for advocating the striking and cutting of the joints during the erection of the building:

Good mortar must be used for laying the face bricks, or a good joint cannot be produced. The face bricks must be wetted before laying them during the dry months, or the moisture will be taken up from the mortar by the dry bricks to such a degree as to make it impossible to properly strike the joint. The face bricks cannot be tampered with by color or copperas, and are, therefore, likely to be of a better class than for work intended for pointing.

The joints are more durable, as they form one body with the mortar of the wall instead of a veneering, as in the case of pointing. The joints, if properly trowel-struck and cut, exclude the weather more effectually than if pointed, for the reason that the top and bottom edges in pointing are cut off with a "Frenchman" (*i. e.*, a table-knife filed to a point and turned up at the end). This tool often cuts into the mortar joint, leaving ragged edges and lodgements for the weather, instead of a full joint, with clean top edge, ironed to a degree of smoothness by contact with the under side of the brick trowel in its passage along the joint in the act of cutting off the top edge. A building in which the joints are struck and cut during erection always attracts a better class of workmen than a building carried up rough for pointing, the building thereby benefiting by the employment of additionally skilled workmen.

There is no class of work in the trade upon which the skilled bricklayer prides himself so much as upon the finish of his trowel-struck and cut-joint, and though it may seem incredible to the uninitiated, there are numbers of men who have followed for years the calling of the bricklayer who are unable to strike and cut a joint possessed of the distinguishing characteristics of first-class work.

There are some examples of good brickwork in London which might with safety be cited in specifications as the standard and quality of work required. A plan which recommends itself is to build a sample piece of face brickwork in the early stages of the job, as a standard of work below which the contractor shall not go—a practice very largely followed by engineers, and not confined to brick-work only.

Though the practical bricklayer will in nearly every instance declare in favor of the flat-struck joint because of the facility it affords him of hiding some of the inherent and acquired defects of the bricks (defects of shape, and of damage by transit), yet there is much to be said in recommendation of the weathered joint now in vogue; and in two pieces of work executed at the same time, all conditions being equal, there is no doubt that the weathered joint would be found the more durable of the two, on account of its sheltered position with respect to the face of the building. The top edge of the weathered joint should be struck well back—not less than one fourth inch—and the bottom ragged edge removed. The joint slightly overlapping the top edge of the course below. If the joint is cut above the top edge of the course below, the joint is likely to form an arrestment for the weather, and defeat the object of the weathered joint. Where this form of joint is used, it should be borne in mind that a large proportion of our bricks ordinarily used for facings are not only pervious to moisture, but are active inductors of it, by reason of their porous structure and consequent capillary attractiveness. With bricks of this kind the weathered joint is of little or no use, for the rain, though falling free of the mortar joint in its passage down the wall, will be imbibed by the brick courses between joint and joint, until the wall be well charged with moisture. In weathered-struck joints intended to be first-class work, the bricks should be sorted out to a regular thickness by trying each brick to a gauge. The necessity of this arises from the fact that the top edges of the bricks when building are laid or adjusted to the level of the brick line, drawn from end to end of the wall, and any difference in the thickness of the bricks is, therefore, unavoidably driven into the mortar bed-joint of the course below, and is made very apparent by striking or weathering the upper portion of the joint from one fourth inch to three eighths inch back from the face of the wall. The flat-struck joint, from its comparatively exposed position, is susceptible to injury, and to apparent obliteration by sooty deposits in our large-manufacturing towns, losing the interest and units of measurement, which the joints, more than anything else, impart to a piece of work; while the weathered joints, with their play of light and shade, always remain distinctive features, or indices of construction.

Tuck-pointing has done more to bring brickwork into disrepute than any one thing connected with the trade-manual of the bricklayer. Introduced about the middle of the present century as an imitation of gauged brickwork, its chief use has become to cloak up the most inferior work (labor and material), situate mainly

in suburban districts. The introduction of this branch of the bricklayer's trade came to him as one of those compensating reliefs at a period when the reign of the stuccoed front, with every circumstance of monotony and ugliness connected therewith, had made his work uninteresting and wearisome; but the prevalent healthy feeling actuating our architects to-day is fast relegating it to the limbo of shams—at least in its application to exterior facings.

A *résumé* of the mode of working will set forth better than in any other way the reasons of objections to this joint. In brickwork intended for tuck-pointing, the joints are raked out during erection and at some future period, when completing the works, are again filled in with mortar assimilated in color to that of the wall by the admixture of earthy pigments, viz., Venetian red, Spanish brown, yellow ochre, etc., depending upon the color required to be produced.

The joints filled in with mortar are rubbed down with a piece of soft brick of the same color as the brickwork, or with a piece of sack-ing, flush with the general surface of the wall face. The whole surface rubbed down is then coated with color of the same objectionable earthy base, and approximating as nearly as obtainable to a brick color; in the case of stock work or malm-work, green copperas only need be used as the coloring medium. The white putty-joint is then applied by means of a jointer, to the mortar-joint previously rubbed down and colored, the putty-joint consisting of water-slaked or putty lime and silver sand, slightly projecting from the wall face.

The earthy colors used in the stopping mortar are destructive of its setting and indurating properties; and the liquid color or wash applied to the rubbed-down face prior to putting on the putty-joint interposes a separating medium between the putty-joint and the filling-in or stopping mortar, interfering with the firm and proper adhesion of the two. It is true that the alum or copperas used in the liquid color may, after it has crystallized, assist the adhesion of the two joints.

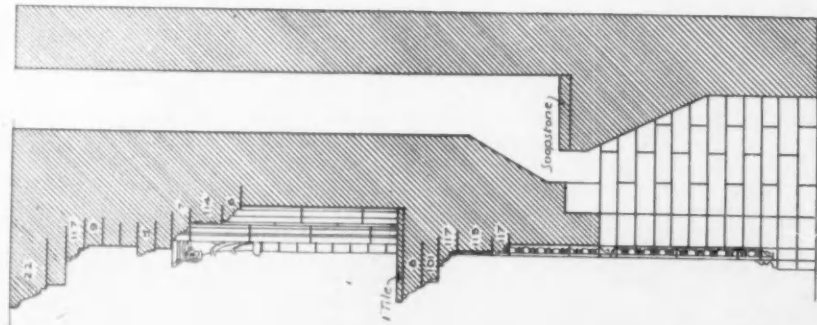
The above enumerated causes, combined with the fact that the putty-joint stands out from the wall, however slightly, subject to the solvent action of rain and the destructive action of frost, easily accounts for the short life of tuck-pointing in exposed situations. When tuck-pointing was first introduced, it was customary to make an incision along the middle of the filled-in joint, which was done by running the point of a fairly large-sized nail along the top edge of a rule held in the position to be subsequently occupied by the putty-joint. In this way a key or clinging for the putty-joint was obtained, but which is now seldom or never done. Another objection to tuck-pointing and generally to the application of color to brickwork is that a true brick color and face cannot be obtained by this process, nor by any other known process; for no matter how closely bricks are sorted for uniformity of color, there are sure to be inequalities of tint and blend, constituting much of the beauty of good brick-facings, an effect which cannot be obtained or imitated by the application of color.

This characteristic is more apparent in "picked" London stocks than in any other class of bricks, the high dark-brown tints of which are due to the presence of iron in the clay and intense firing—a sure indication of a good stock brick. A knowledge of the character of the clay of brickmaking districts will sometimes assist in the choice of a brickmaker. Loose sandy clays, requiring a large proportion of chalk in their composition, produce bricks of a color approaching to that of a malm, but of a light, specific gravity and porous structure, while the purer class, consisting chiefly of alumina, with little or no uncombined silica, requires less chalk, producing bricks of a harder and more enduring character. Still, it is surprising how some of the softer kinds of stock bricks and malm bricks, when made from good clays well tempered and thoroughly fired, will harden by exposure, and form a skin upon their outer faces, which can be removed only with difficulty. Stock bricks of this kind, though soft, are of a close, firm texture, a section of the brick, when broken, showing that the clay has been thoroughly pugged and well driven into the brick mould in the making.

(To be continued.)

Every non-subscriber should read the special offer on the third cover page. It concerns him especially.

Send 25 cents for the special cornice number of The Brickbuilder, containing working drawings for 45 brick cornices.

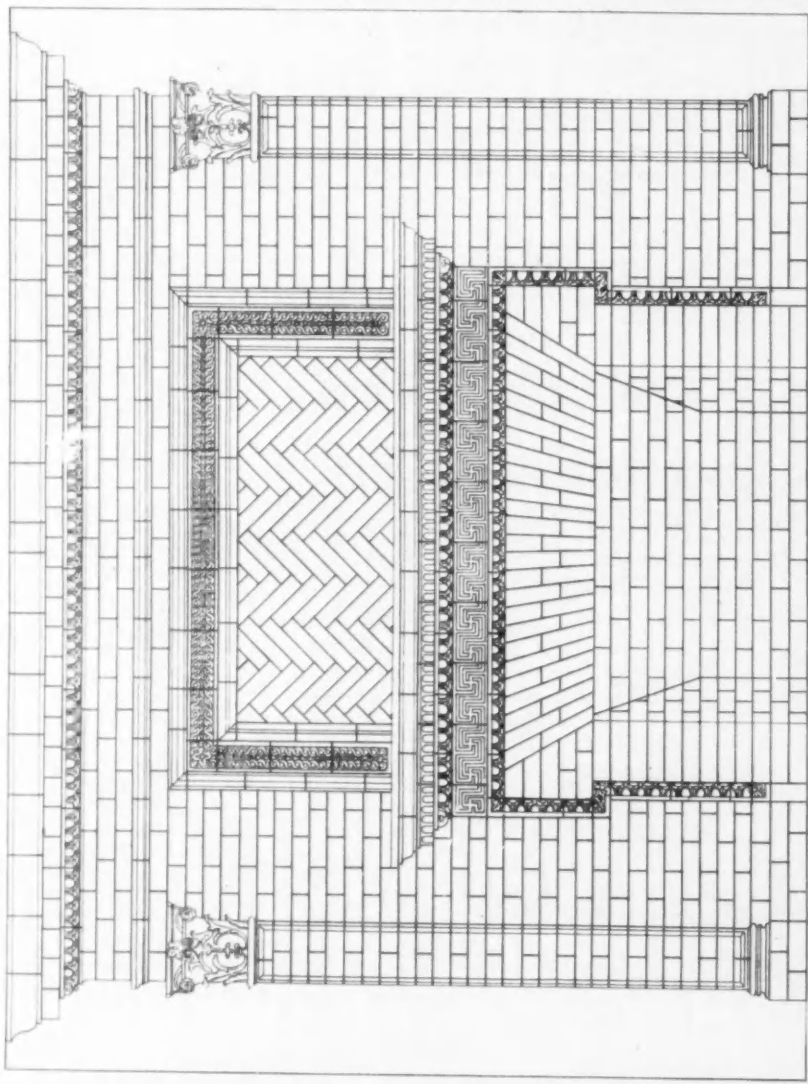


SECTION

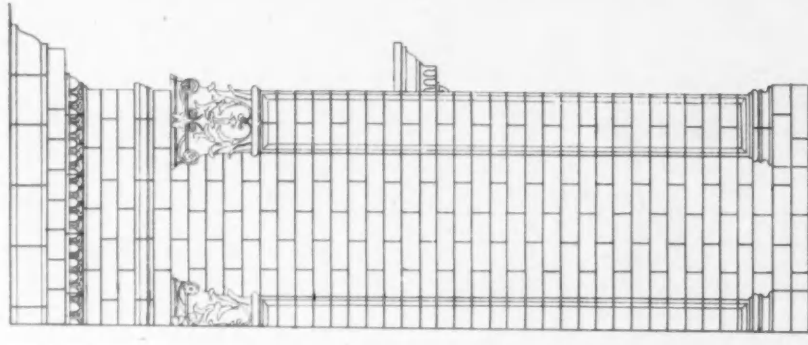
NUMBERS REFER TO THE DIMENSIONAL AND BOSTON FACE BRICK 65 CATALOGUE - DIMENSIONS

WIDTH OF BREAST	10 FT 0 IN
HEIGHT	9 " 0 "
WIDTH	4 " 0 "
HEIGHT	2 " 5 "
DEPTH	1 " 8 "
HEIGHT	4 " 8 "
DEPTH	2 " 6 "

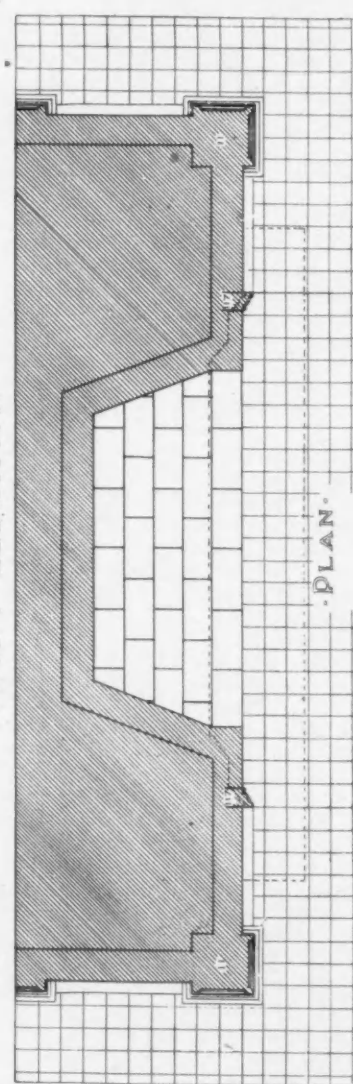
FACE BRICK WORK INCLUDING FIRE BACK, UNDER FIRE AND TILE SHELF COVERING, IN BED BRICKS 89400 CREAM 14100



FRONT ELEVATION



SIDE ELEVATION



PLAN

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FIFTH PRIZE.

WILL S. ALDRICH, SOMERVILLE, MASS.

BRICKBUILDER COMPETITION No. 5.

DESIGN FOR A BRICK FIREPLACE.



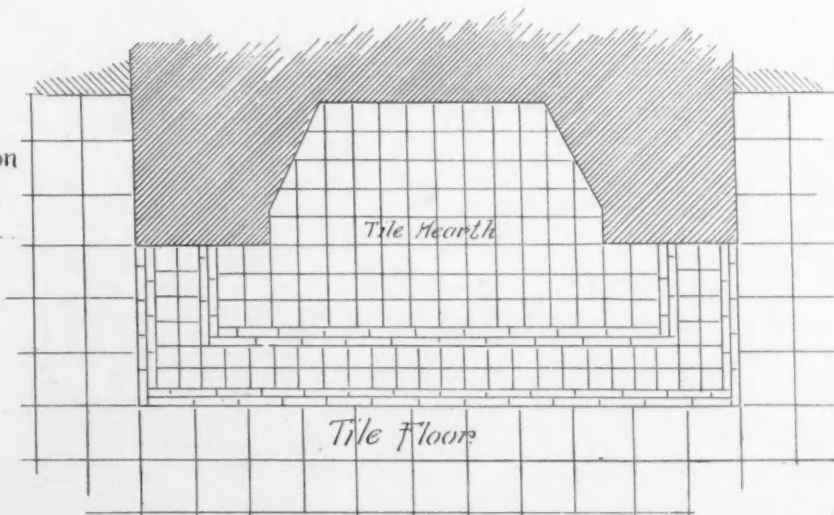
-Section-

-Front-

-Side-

Estimate of the
New York Anderson
Pressed Brick Co.
For brick neces-
sary to build
this Mantel
and Fire-place.

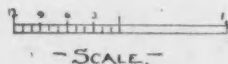
\$26.83



-Plan-

Mantel of
Coral Brick

—Monsieur—



—SCALE—

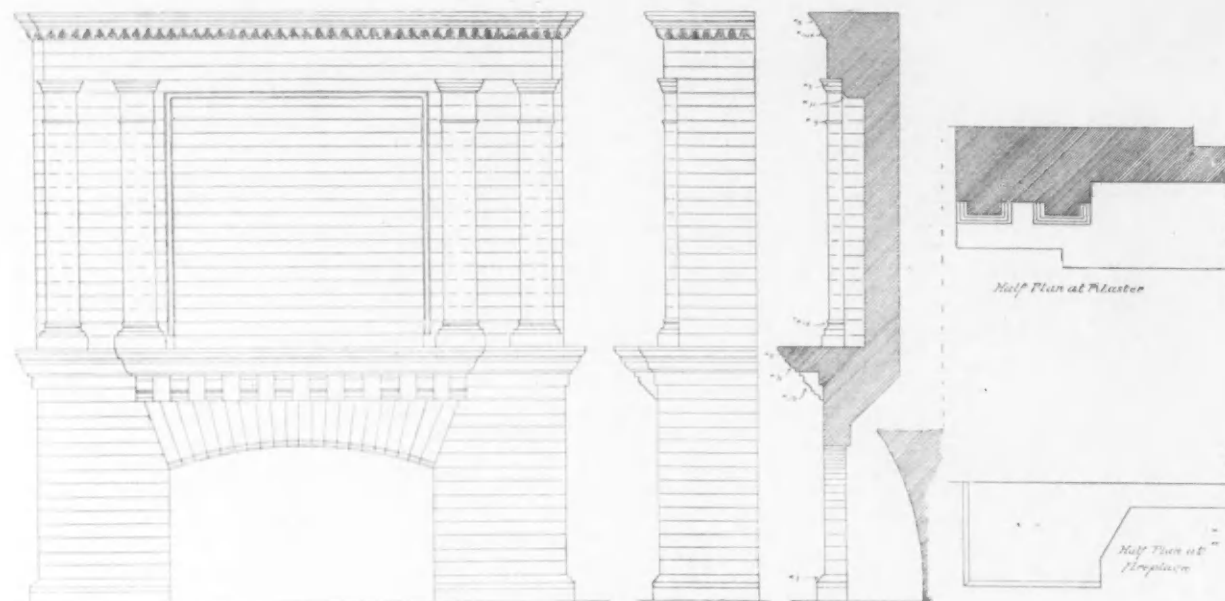
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FIFTH PRIZE.

RAYMOND F. BOCORSELSKI, HARTFORD, CONN.

BRICKBUILDER COMPETITION No. 5.

DESIGN FOR A BRICK FIREPLACE.



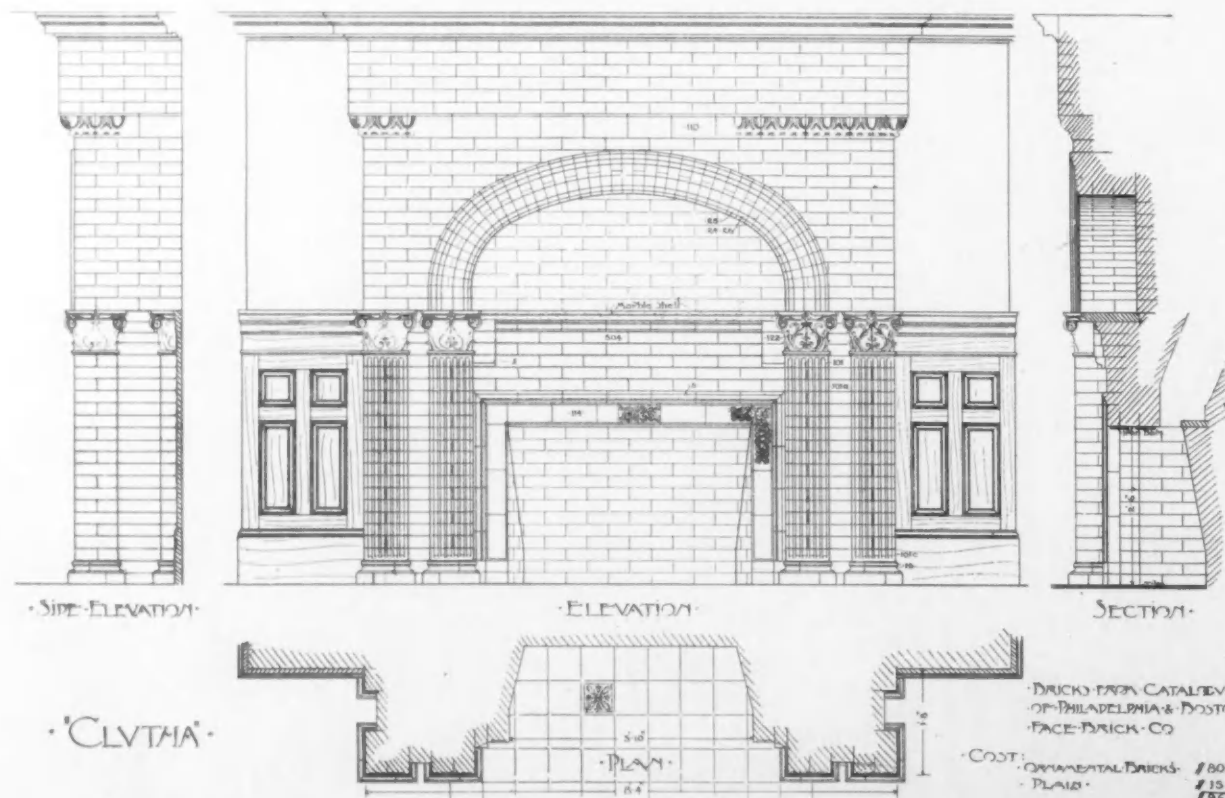
Philadelphia & Boston Face Brick Co's
Bricks used

Cost of Face Brick ----- \$296.4
Cost of Ornamental Brick - " 255.8
Total = \$552.2

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BRICKBUILDER COMPETITION No. 5.

W. P. CRABTREE, NEW BRITAIN, CONN.

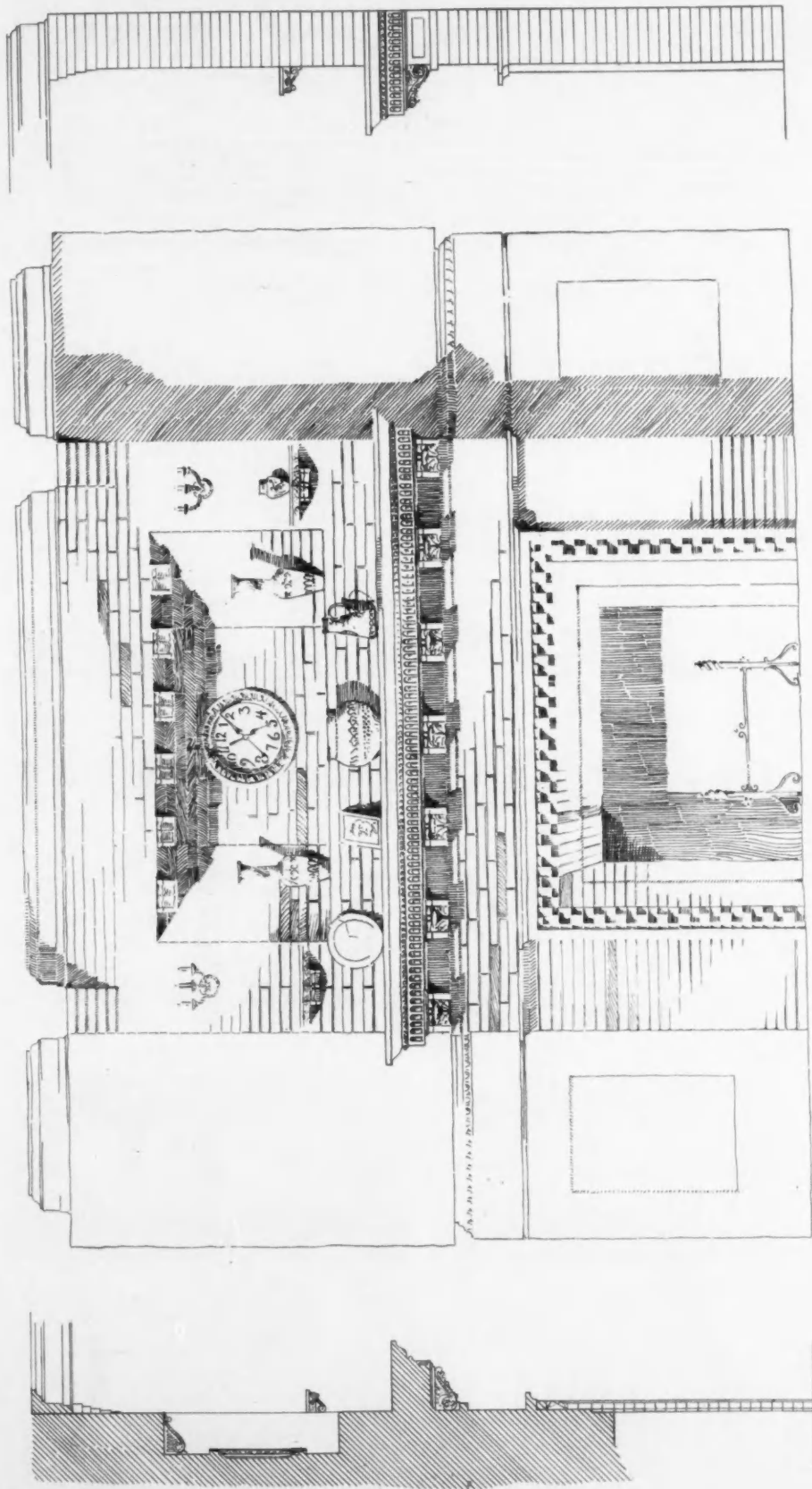


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BRICKBUILDER COMPETITION No. 5.

WM. S. MACLAREN, BOSTON, MASS.

THE BRICKBUILDER.



TO BE DONE IN BROWN TERRA-COTTA OR BROWN ROMAN
BRICKS AND TERRA-COTTA TO MATCH. DETAILS AND
OFF-SET 'A' TO BE MADE BY CUTTING BRICK. SHELF OF
OHIO BROWN STONE. APPROXIMATE COST OF STOCK \$60.

SUBMITTED BY



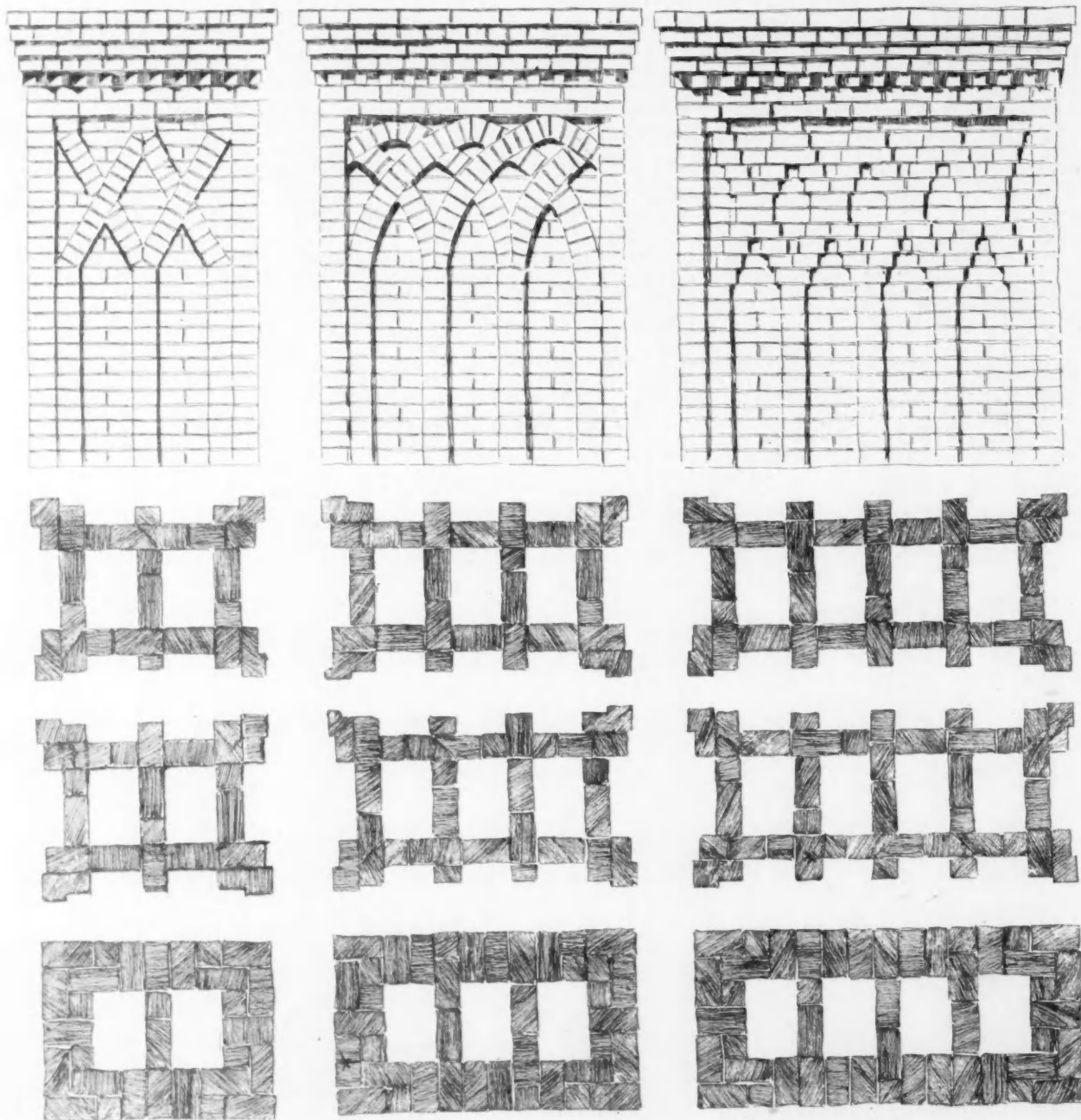
PLAN ABOVE SHELF

PLAN BELOW SHELF

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BRICKBUILDER COMPETITION No. 9.

R. A. GREENFIELD, NEW YORK CITY.



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FIRST PRIZE.

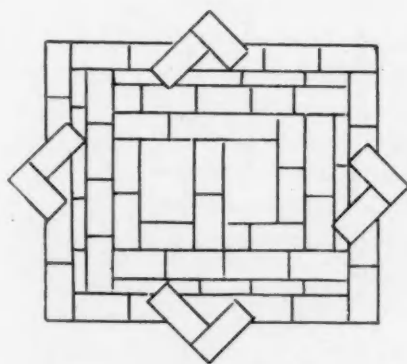
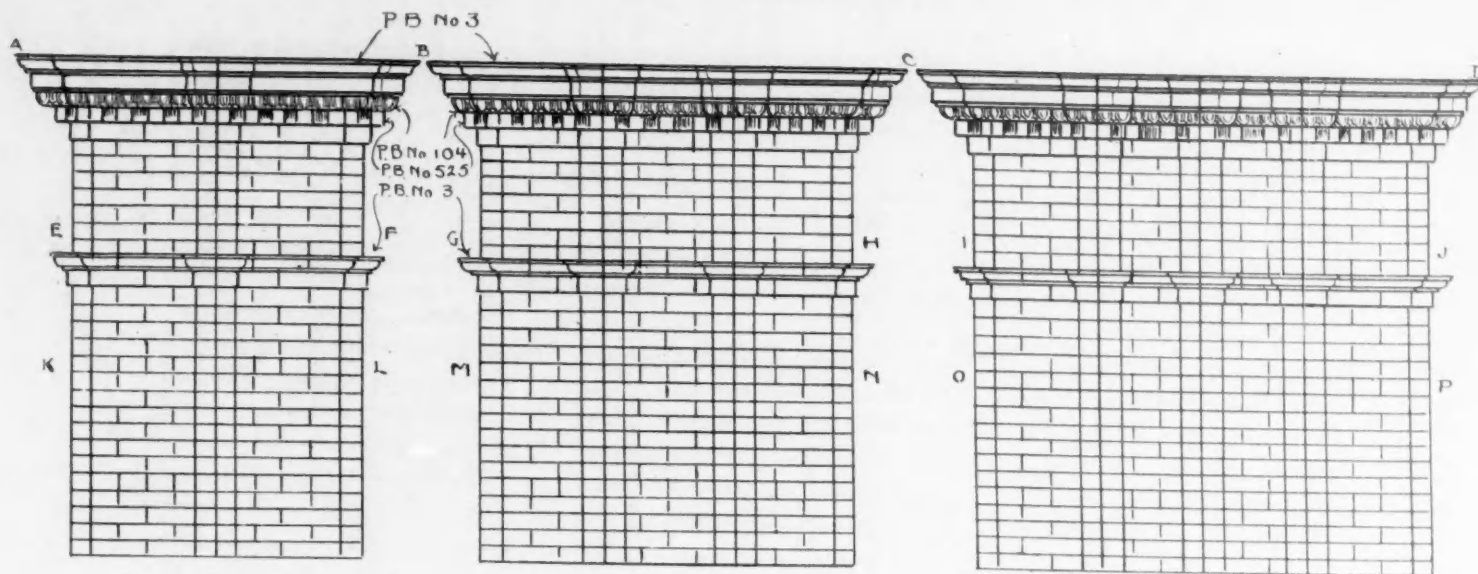
WALTER H. KILHAM, BOSTON, MASS.

BRICKBUILDER COMPETITION No. 4.

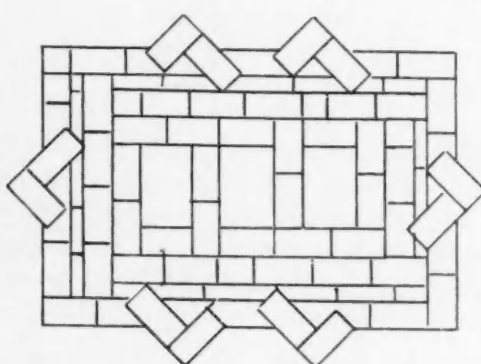
DESIGN FOR CHIMNEY-TOPS.

SCALE: $\frac{1}{2}$ INCH TO A FOOT

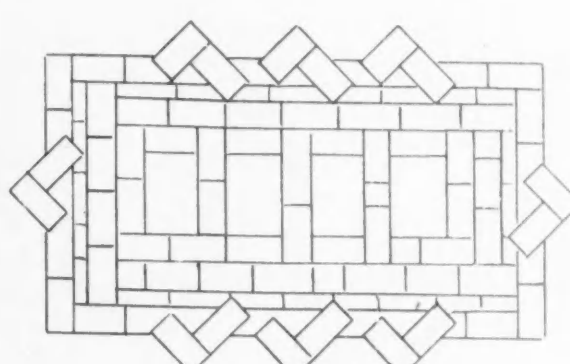
SUBMITTED BY SMALL



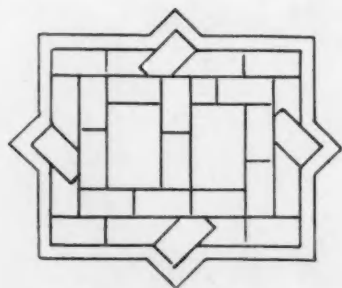
PLAN "AB"



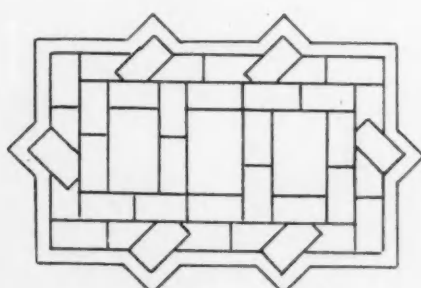
PLAN "BC"



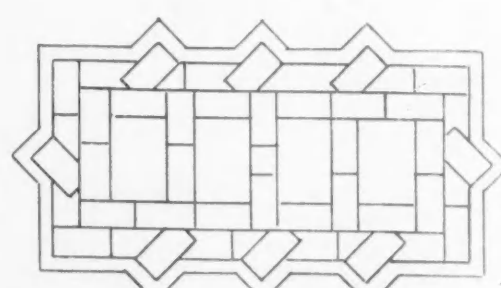
PLAN "CD"



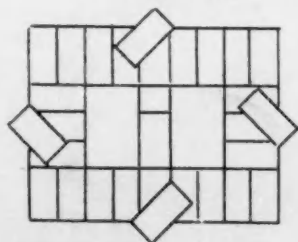
PLAN "EF"



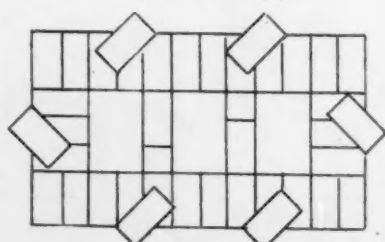
PLAN "GH"



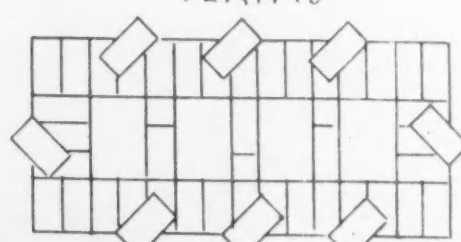
PLAN "IJ"



PLAN "KL"



PLAN "MN"



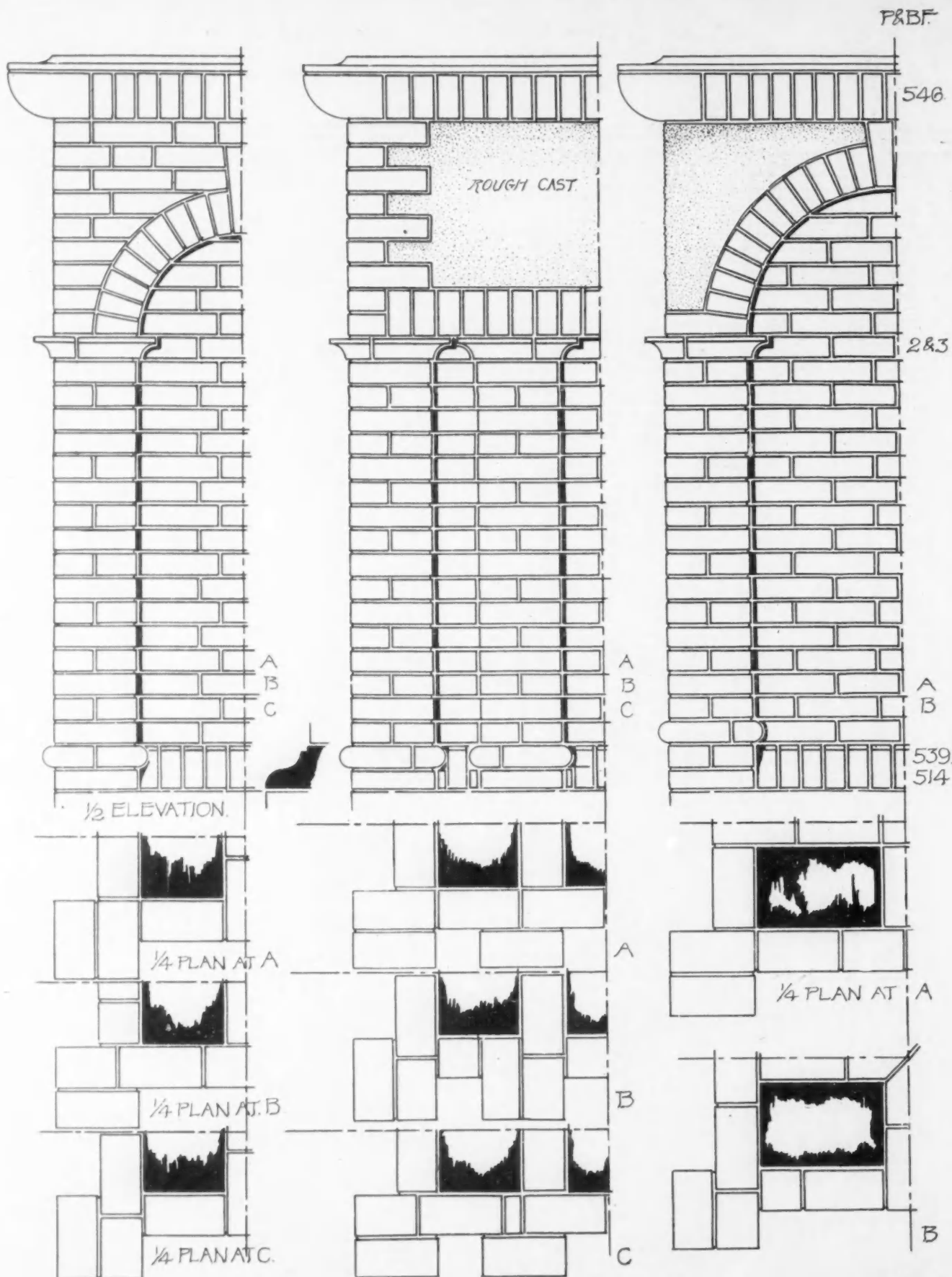
PLAN "OP"

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SECOND PRIZE.

BRICKBUILDER COMPETITION No. 4.
DESIGN FOR CHIMNEY-TOPS.

G. F. CRUMP, ALBANY, N. Y.



• 1892 •
• VIII • XXV •

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THIRD PRIZE.

BRICKBUILDER COMPETITION No. 4.
DESIGN FOR CHIMNEY-TOPS.

H. G. FLETCHER, SOMERVILLE, MASS.



✓ ANCIENT USES OF TERRA-COTTA.*



THE pottery shard is wellnigh imperishable. Of a material plastic, fine, facile to take every impress that man conceives, equally lending itself to broad surfaces and to subtle subdivisions, capable of being moulded into forms as fine as those of metal and as massive as those of stone, there remained but one thing to be desired,—durability. Clay crumbled and became dust, moisture was fatal to the forms in which it was cast, and disintegration began even before the work was complete.

Two of the elements of nature had been invoked to make the form of clay; it required the third to

complete its creation. The modelled form, submitted to the power that destroyed all other materials, that made wood into ashes, that crumbled stone and melted metals, received from it a permanency that nothing except pulverizing could destroy; the clay, soft and pliant, falling to pieces at a touch, became, under the action of fire, terra-cotta, hard, firm, elastic, capable of withstanding more than iron, and retaining the slightest mark upon its surface with a persistency greater than that of stone. It is to this material that time has intrusted the records of dynasties and of empires. The potsherds of Hissarlik and of Santorin, the vases of Greece and of

Rome, tell us as complete a story as all else that remains of the past. Whether it be the glazed bricks of Nineveh, or the fragments of Monte Testaccio, each piece of fired clay bears a testimony that time has not been able to efface,—a testimony not only of the period, but of the individual, of the touch of the man himself. For though terra-cotta often and usually takes its form from a die, the original

matrix is taken directly from the model of the artist, and should reproduce it in every particular; so that, as in few other of the artisan arts, it expresses the artist directly, and not by translation. It is futile to attempt to trace the antiquity of the art. It must have been known in prehistoric times and have been discovered by chance. No material so readily formed into a drinking vessel as clay;

and such a vessel once formed, no more natural consequence than that it should have been put over or into fire to heat whatever it contained. The discovery of the durability given it by the action of fire would follow as a matter of course.

Yet both the Egyptians and Assyrians fired but few of their brick, trusting to the intense heat of a tropical sun to give durability to the square masses of clay of which they built their walls, and the sun-burned bricks of Nineveh have crumbled back again into mounds.

The face walls of the buildings, it is true, were covered with a vitreous glaze, which required firing, and the brick on which this glaze is formed are consequently hard and sound; but the use of the terra-cotta, apart from the pottery, does not appear to have occurred in architectural forms before the time of the Greeks.

It appears first in the gutters to the temples, the *equiductum* or upper moulding being made of terra-cotta, as of great durability. This seems to have happened in some of the early wooden temples, and also in those that were covered with metal plate. The earliest of these gutters were painted, but later they began to be modelled, the painted forms being repeated in the modelling. The first modelling is entirely that of impress into the form, scratches, dots, and outlines etched into the clay. It is some little time before raised ornament makes its appearance. The same thing occurred in the pottery; it was natural that drawing merely should antedate modelling in the round.

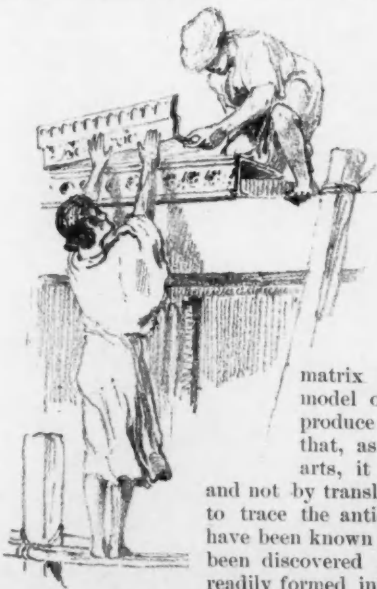
The outlines of the painting on the earlier work were etched with a sharp point, and the color filled in between.

The workmen upon the terra-cottas were a band of artists whose craft was handed down from father to son; and as they shaped the forms upon rude tables, or painted the antifixes, or carefully set the crowning mouldings upon the temples, they developed a pleasure in their work, which is manifested by the pride with which they signed their names upon it, adding the phrase, "I, the Athenian, made it."

The Etruscans used even more vivid coloring than did the Greeks, and, in common with all barbaric peoples, preferred yellows and brilliant reds. Their towns were small, and neighboring communities constantly menaced each other, so there

was little of the comparative security which would allow commerce, or the working of quarries of marble or of other stone. The artisans, therefore, turned their attention to pottery and to bronze, and terra-cotta was an excellent material upon which to display brilliant pigments. Not only was it used as elsewhere for struc-

*This article was originally prepared and published by the *Architectural Review* as an advertisement of the New York Architectural Terra-Cotta Co. It is so good and so cleverly illustrated that we republish it, by permission of both parties interested.—Ed.





tural portions of buildings, but all ordinary utensils were made of it, and it was finally used to receive the remains of the men whom it had so well served during their lives. The sarcophagi of the Greeks were hewn from a single stone; those of the Etruscans were cast in terra-cotta. Some, that were more ambitious, had the carefully modelled works of artists upon their lids, the recumbent figures of the dead, with an attempt at portraiture in the features, but by far the larger number were impressed by moulds, so that there were many replicas, more or less crude, which differed from each other in coloring only. The sides and ends were usually decorated with mythical scenes, the sacrifice of Iphigenia and the mystery of Mithras occurring most frequently. Often the modelling was merely touched with vermilion, the color with which conquerors smeared themselves as emblematic of victory, and which played so large a part in the polychromy of the past. The funeral rites of the Etruscans must have been unusually solemn. The tombs were excavated in tufa below the surface of the ground; and long narrow staircases led downward apparently into the depths of the earth; at intervals opposite each other, on either side, were niches in which torch-bearers stood while the procession slowly descended alternately in the torchlight and the darkness into the tomb chambers below. There terra-cotta Gorgon's heads leered from the walls, and a lamp of the same material swung from the ceiling by a leaden cord. The main chamber in the larger tombs, such as that in the environs of Perugia, was devoted to the funeral ceremonies, while all about it niches contained the sarcophagi of the different members of the family, each of terra-cotta, and each colored upon nearly its entire surface. The backgrounds of blue, the dull red of the flesh of the male figures, and the white of the female, the scarlets, yellows, and greens of the draperies, though crude when seen in strong light, must have been rich and decorative in their effect in dim light against the background of the niches. Doubtless there were emporiums for these sarcophagi, as there are tombstone marble yards to day, and contiguous to the street of tombs of Veii were workshops where the terra-cottas were pressed into forms, baked and decorated, and where one might choose the future receptacle for his ashes.



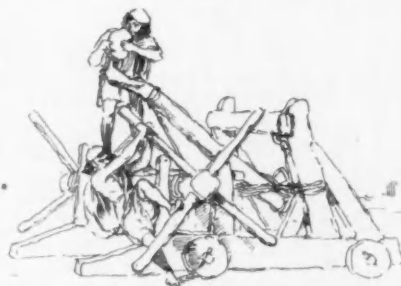
In Asia Minor large terra-cotta vases were used as sarcophagi, such vases or jars as those for wine and oil. The body was doubled forward from the waist with the head between the knees in order to adapt it to the scant space, and the vase itself, slung upon long staves, was carried in the universal manner of carrying burdens in the East. These vases were buried upright in the grounds. The columbaria, or rooms with little niches for small vases containing the ashes of the dead, seem to have been used by the Romans more than by other nations. The funeral urns of the finest of baked clay were decorated by the best work of painters who were skilled artists, and whose very touch had character and force. And it was not alone with painting that these urns were decorated, but with bas-relief, with applied enamels and rich sculpture, so that some of them are of priceless value.

The terra-cotta urns, like all else in this imperishable material, remain better preserved than any of the later work in marble or in bronze. Many of the bronze forms are copied in the terra-cotta, which seems to have lent itself to subtle form equally well with metal itself. In the early works of art, skill seems to have been commensurate with the facility of working the material used, and bronze and terra-cotta attained a high degree of perfection long before marble or other stones were skilfully handled. In



modelling the clay, the very curves caused by gravitation had a subtler line than those hewn out of stone, and it is to the freedom with which clay can be handled that terra-cotta owes much of its charm; a charm similar to that in an artist's sketch, where the material has been felt to be no obstacle to the thought.

It was not alone in the arts of peace and in the burial of the dead that terra-cotta was of use. A material so easily obtained, so capable of being fashioned by even unskilful hands, and of so little cost, could not fail to become of value in the paraphernalia of the constant wars that formed the greater part of the life of the East. The libations to the gods before battle were poured from terra-cotta craters, the perfumes and incense that smoked before the altars of Tanith, of Poseidon, and of Mars, burned upon terra-cotta vases; the poorest of the soldiers wore breast-plates of terra-cotta scales, and some, at times, strapped shards to their feet as protection. Light as well as strong, the towers upon the elephants used in the armies of Carthage, and the great plates which adorned their breasts, were occasionally made of terra-cotta, gorgeously painted in many colors. Masks of clay, with grinning, grimacing faces, were propped above the edges of the circumvallation trenches to frighten the enemy. The captains drained *patera* holding spiced wine before they entered the fray, and received, when wounded and burning with thirst, water from the earthen bottles carried by the hoplites. Everywhere in the midst of sieges appeared this imperishable material. The walls of cities were built of it, with corbelled, projecting battlements, whose overhanging masses were pierced with apertures through which, mingled with the streams of molten lead, the speeding arrows and stones, great masses of baked clay were hurled down upon the heads of the besiegers. The very streets were paved with it, and the ditches about the walls were filled with broken sharp-edged potsherds to cut the feet of assailants. The cohorts of slingers in the armies carried bags of clay bullets about their waists, which were replenished, as their stock was exhausted, from great sacks of ammunition under which long lines of camels staggered in the rear of the combatants. These bullets were stamped with the symbols of the country from which the soldiers came, as, for instance, those of the Egyptians bore an ape's head, the Asiatics, a hawk or a pomegranate, the Greeks, a citadel or the name of an archon. They also bore inscriptions in much the same way that the swords of later days had inscriptions upon their blades — vindictive wishes or adjuration, such as "Kill," and "Slay the enemy."



The catapults, huge engines brought to the sieges upon carts drawn by horses or oxen, which hurled from a spoon-headed lever projectiles over the city walls, were furnished with great terra-cotta balls, or with earthen pots containing the celebrated Greek fire, or substances giving out a noisome stench. These were the bombs of ancient warfare breaking upon the ramparts and within the streets, and wounding with flying fragments of sharp cutting clay. They must at least have been more formidable than the arrows of the heavy and slow ballista. The smaller catapults were nicknamed *onagers*, or mules, as they threw stones in much the same way as mules kick up the earth with their feet, and were exhorted by



the inscription on their projectiles to "kick well." These symbols and inscriptions stamped upon the terra-cotta were the impress of hand seals of metal, the same sort of seals, excepting that they were less fine, as those used to make the Greek coins, and to stamp the Pompeian loaves. The bullets of the slingers, the projectiles of the catapults, and fragments of the broken pots of fire, each was alike imperishable and has lasted through the centuries, and held its testimony of some importance in the slowly growing history of a time with but few other records. The impress in the clay has outlasted gold or silver, brass or iron, and is as intact to-day as when whirled in the leathern thong of a Balearic slinger, or lifted into place upon the catapult by the soldiers of Hannibal or Alexander.

The armies of Belisarius used similar missiles to those of the Romans and Carthaginians, but the buildings of that new Rome which was growing upon the shores of the Golden Horn, of that Byzantium whose statues were said to outnumber its people, were being developed in a new and brilliant architecture different alike from that of Greece or Rome. As in Rome, the walls were built of brick, which were clothed formerly with slabs of marble, but now by mosaics surging up the walls and over the domes. At the bases of the domes windows gave light to the halls below, and in these windows were pierced screens worked or carved to elaborate patterns. Though these were often of marble, at times they were made of terra-cotta, the perforations holding glass of brilliant colors. The Oriental windows of the mosques were of similar designs, but made of two sheets of sawn wood, between which, at the piercings, pieces of brilliant glass were placed. The Byzantine terra-cotta windows had the glass inserted in the clay before baking, or else fastened with cement. Besides these windows there were terra-cotta screens or balustrades of the peculiar pointed acanthus woven into interlaces. The roofs were, of course, tiled as before, and now vitreous glazes begin to appear on the tiles, green and purple and black and white, so that some of the domes were of the colors of the feathers of a partridge-wing,



or of the breast of a pigeon. In the mosaics terra-cotta was very little used, glass forming the principal material. Occasionally a very small piece would be found forming a red spot in a design, but in such a case porphyry was much more apt to be used, or brilliant carnelian. The statues, however, which still retained a great deal of the polychromy of the Greeks, were still, at times, cast in terra-cotta, and the little statuettes, such as those of earlier date from Tanagra, which were used as household Lares or Penates, or at times as ornaments merely, were all of terra-cotta. These were colored exquisitely, and beautifully modelled. There were also terra-cotta dolls for the children, more durable than the lead ones which the little Pompeian children left scattered in the atriums; and some of them were jointed very much like the porcelain and china dolls of to-day. Their clothes were modelled upon them, however, and colored crudely, red seeming to have been the favorite color of the small Byzantines. As for utensils, they only



ing the entire processes of manufacture going on within; and there are terra-cotta doorplates. The ancient furnace pipe was also terra-cotta, and was built into the wall and around the base of the room. This was universal in the Roman and Byzantine baths, and can be found in some of the remains of private houses. In fact, there seem to have been few of the daily crafts in Byzantium that did not employ terra-cotta in some one way or another, whether in the form of sharp-edged shards for cleaning the skins of animals outside the city walls, or bowls from which were drank the hot spiced wines during the winter winds from the Black Sea. Like all the ancient peoples, the Byzantines had terra-cotta to thank for much.



Don't fail to read the announcement on page 3 of cover.

GOOD FIREPROOF CONSTRUCTION.

The report of the burning of the partially completed Athletic Club building in Chicago is still another proof of the value of clay fireproofing materials as a protection for structural iron and steel work. According to newspaper reports, ornamental stonework, interior finish, and materials piled on the different floors were damaged to the extent of \$100,000 or even more, while the frame of the building, encased in terra-cotta fireproofing, was not enough damaged to mention.

This is only an addition to a long list of instances proving the fire-resisting quality of this form of construction, which is probably used to a larger extent in Chicago than elsewhere. We are at some loss to account for the heavy damage to stonework reported, for such buildings are almost always constructed without much use of stone. To every one who witnessed the Boston fire on Thanksgiving day, three years ago, the destruction of the beautiful Bedford Street Ames Building, designed by Richardson, was an effective object lesson in the havoc a hot fire plays with stonework.

If you don't subscribe, order this paper for 1893 before Dec. 10, and get three extra numbers free.

We take the liberty of publishing the following from the editorial columns of the *American Architect*:

"A new sort of roofing has been patented in Germany, and in several other countries, which seems to have good qualities. The history of the invention is rather interesting. Herr Siebel, of Düsseldorf, remembering, what all architects know, that the best protection against damp rising from the ground into walls is a sheet of lead, and remembering, also, that, on account of the great expense of a lead damp-course of sufficient thickness to support the weight of the superstructure without tearing, it is quite common in these days to use as a substitute a sheet of tarred felt, conceived the idea that the advantages of both materials might be united by enclosing a thin sheet of lead between two thicknesses of tarred felt. In this way, while the enclosing felt protects the lead from being torn by the irregularities of the masonry, and from corrosion by the lime of the mortar, the metal, although thin, interposes an impenetrable barrier against dampness, which is not liable, like the felt alone, to gradual decay. Moreover, the combined felt and lead is much cheaper than lead alone, of the thickness that it would be necessary to use, and although patented, it is available, so far as cost is concerned, for buildings of very moderate pretension."

Draughtsmen in offices, by clubbing together, can secure *The Brickbuilder* for 1893 at reduced rates. They will want it. Our special offer on page 3 of cover applies to such club subscriptions. Write at once giving number of probable subscribers.

THE BRICKBUILDER COMPETITIONS.

RULES: All drawings must be sent in marked with some motto or device, and accompanied by a sealed envelope marked with the same, containing the full address of the competitor. The designs are judged by a committee of well-known architects, solely upon their merits, the names of the designers remaining unknown until the award is made, when the sealed envelopes corresponding to the devices on the designs are opened. To protect the interests of our advertising patrons it is stipulated that no ornamental bricks not found in their catalogues shall be used. This is really no restriction, for practically all of the leading manufacturers will be found represented in *THE BRICKBUILDER*. To encourage the study of effective use of the commoner materials, of two designs equally good, preference will be given that showing a skilful use of ordinary bricks to secure ornamental effect.

REPORT OF THE JURY IN THE COMPETITION FOR BRICK FIREPLACES.

Of the designs submitted in competition for a hall mantel none quite reached the standard of the best design, while yet a large number were interesting and suggestive though not without faults. *Yule log* was placed first as being the best in general conception and treatment, and thoroughly suitable to the material. There is, however, a certain heaviness in the proportions which further study might have improved.

Ball and wings is a very graceful and well-proportioned design; but it is faulty in that it would be more suitable to stone than to brick. Over the fireplace opening is what in treatment is a panelled lintel, which being made up of narrow bricks would have to be supported by an iron bar. A frank adoption of a flat arch would have been much better both in design and construction.

While *ball and wings* has a false treatment of the span of the opening, *Albanian* has no recognition whatever of any means of spanning it. The latter is perhaps more frank, but is even less desirable as a matter of design. A flat brick arch should have been frankly used. In other respects *Albanian's* design is well proportioned and appropriate.

The design marked by a *scribbled hieroglyph* is somewhat similar in idea to that of *ball and wings*; but it is not so well proportioned, and the projection of the arch over the shelf would have, in reality, a most unfortunate effect. The design is interesting in elevation, but would prove much less attractive in perspective.

Nemo's design would have been better if the panelling above the shelf had been simplified, perhaps by using a single large panel instead of cutting up so much the face of the breast. The position of the pilasters below is also a little unfortunate. In fact the omission of the pilasters altogether would have improved the design.

Wreath treats his pilasters better, but the design is unnecessarily heavy and ungainly, and the motive of pilasters and entablature (*i. e.*, of post and lintel) as adopted in the upper part of the design is hardly suitable to brickwork. A lintel made up of small pieces such as

bricks is an absurdity. For this reason the frank recognition of the iron lintel used over the fireplace opening is to be commended. If such a lintel is required it ought to appear, so as not to give the impression to the eye (as do some of the other designs and the upper part of this) that the bricks above the opening are without support and will fall out. In most cases, however, some sort of arch is to be preferred to an iron lintel. The drawing is to be commended also for its rendering.

Trefoil leaf has good elements thrown together somewhat at hazard, and without sufficient study of proportion.

A one-year cub sends a simple, attractive, and appropriate design. But here again there is no recognition of any support for the bricks over the opening.

J. J. is straightforward but somewhat commonplace.

Monsieur has a good, simple design, — a trifle too bald, however.

Clutha's mantel-piece suggests a good idea that might have easily been better worked out. The shape of the arch is especially unfortunate.

One of the best designs submitted is that of *Fleur-de-lis*. It is with regret that the jury feel obliged to place this *hors-de-concours* as it hardly meets the condition of the problem which calls for a mantel of brick from the makers' catalogues, while the architectural treatment of this mantel depends entirely upon its terra-cotta.

It may be said that the construction of the fireplaces in many of the designs submitted is very defective, especially as regards the throat of the chimney. But this has not been insisted upon as it does not affect the design.

By a mistake of the printer, Mr. G. F. Crump's name was placed on the second prize design for a brick fireplace in place of Mr. Green's, and Mr. Jas. C. Green's name was printed on the third prize design in place of Mr. Crump's (see August number). The design marked by *ball and wings* was awarded the second prize by our jury, and its author is Mr. Jas. C. Green, of St. Louis; that "submitted by Albanian" receives the third prize, and its author is Mr. G. F. Crump, of Albany. We are indebted to Mr. Crump for calling our attention to this mistake.

The designs of brick fireplaces awarded first, second, third, fourth, and two of the fifth prizes were published in the August number.

AWARD OF COMPETITION NO. 4. CHIMNEY-TOPS.

Plate 70. First prize, \$10.00, "Two concentric circles," Walter H. Kilham, Boston, Mass.

Plate 71. Second prize, \$7.50, "Small," G. F. Crump, Albany, New York.

Plate 72. Third prize, \$5.00, "1892," H. T. Fletcher, Somerville, Mass.

Fourth prize, \$3.50 book, competitor's selection, "Header," J. T. Maclaren, Philadelphia, Pa.

REPORT OF THE JURY IN THE COMPETITION FOR CHIMNEY-TOPS.

The designs marked by *two concentric circles* are placed first. They show an excellent treatment of chimney-tops in plain brick without the use of any moulded brick except at the angles, and are at once simple, effective, and appropriate. The tops should have been built with eight inches of brick instead of four inches around the flues, and the angles are unnecessarily weak in construction.

Small's designs are also good, and are placed second only because less distinctively brick. The construction is better than in the case of the first design.

1892's chimneys are good, but would be less effective than the others.

The designs submitted by *Header* follow the precedent of a great many excellent old English chimney-tops, but the proportions might be improved. As they stand, the designs are a little top heavy.

The publishers desire to state that the designs of chimney-tops by *Header*, J. T. Maclaren, Philadelphia, Pa., were unavoidably left out of this number but will appear in the following number.

The designs submitted in competition No. 6, an arched window opening, and the award of the jury on same, will appear in the next number.

Will the gentleman submitting fireplace design under *nom de plume* of "One-Year Cub" please send us his address, as it was never received?